

# इंटरनेट

# मानक

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IS 10810-17 (1986): Methods of test for cables, Part 17: Tear resistance test for heavy duty sheath [ETD 9: Power Cables]



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“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

## METHODS OF TEST FOR CABLES

PART 17 TEAR RESISTANCE TEST FOR  
HEAVY DUTY SHEATH

“पुनर्विष्ट १९९६”

“RE-AFFIRMED 1996”

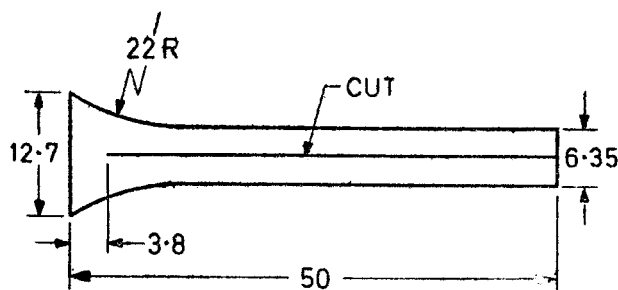
**1. Scope** — Covers method for determination of tear resistance of elastomeric heavy duty sheath.

**2. Significance** — The sheath of heavy duty cables is subjected to mechanical stresses, particularly while in service. The tear resistance is affected to a large degree by mechanical fibering of the rubber under stress as well as by stress distribution and speed of stretching. This test is carried out to ensure that the sheath has requisite strength to withstand the same.

**3. Terminology** — The tear resistance is expressed as the maximum load in newtons required to tear the section divided by the thickness of the test piece in mm.

#### 4. Apparatus

**4.1 Die** — The shape and dimensions of punching die for preparing test specimens shall conform with that shown in Fig. 1. The die shall be sharp and free from nicks in order to prevent ragged edges on the specimens.



All dimensions in millimetres.

FIG. 1 TEST SPECIMEN FOR TEAR TEST

**4.2 Tensile Testing Machine** — The machine shall be automatic. It shall have the capacity to meet the requirement of this test and shall have the rate of separation of jaws as specified in the procedure. The grips shall be such as to firmly hold the test specimen.

**4.3 Micrometer** — Least count 0.01 mm.

**5. Material** — No material other than the specimen is required.

#### 6. Test Specimen

**6.1** The test specimen shall be prepared from a piece of sheathed cable taken not less than 300 mm from the end of the cable.

**6.2** The test specimen shall have the dimensions as shown in Fig. 1.

**6.3** The sheath shall be cut open length-wise and the other components of sheathed cable which are not to be part of this test specimen shall be removed carefully without causing damage to sheath.

**6.4** It is permissible to grind the sheath to remove irregularities or corrugations, if present, before preparing the specimen.

**6.5** The central longitudinal cut, perpendicular to the width of the specimen, is made to a point 3.8 mm from the wider end. The thickness of the test piece should be not greater than 4.00 mm, nor less than 1.00 mm.

## IS : 10810 ( Part 17 ) - 1986

### 6.6 Number of specimens — Six

7. **Conditioning** — All the test specimens shall be kept at a temperature of  $27 \pm 2^\circ\text{C}$  for a period of not less than 3 hours prior to testing.

### 8. Procedure

8.1 The test shall be made within 5 minutes of removing the specimen from the conditioning cabinet and specimen shall receive minimum handling.

8.2 The halves of the split end of the specimen are placed in the jaws of a tensile testing machine and the jaws separated at the rate of 350 to 500 mm/min till the specimen has been ruptured.

### 9. Tabulation of Observations

Specimen No.	Thickness of the Specimen, mm (A)	Breaking Load of the Specimen, N (B)
1.		
2.		
3.		
4.		
5.		
6.		

### 10. Calculation

10.1 The tear resistance is calculated as follows:

$$\text{Tear resistance, N/mm} = \frac{B}{A}$$

10.2 The calculated values so obtained are classified in order of increasing value and the average of the two middle values (median value) is taken as the tear resistance.

### 11. Report

#### 11.1 Tear Resistance of Heavy Duty Elastomeric Sheath

Cable type  
Batch No./Lot No.  
Cable No./Drum No.  
Date of testing

#### 11.2 Results

Reference Specification \_\_\_\_\_

Specimen No.	Tear Resistance, N/mm	
	Observed	Specified

11.3 **Conclusion** — The specimen meets/does not meet the requirements of the specification.